

Electro-Voice

ELECTRO-VOICE, INC.
BUCHANAN, MICHIGAN



Specifications and Instructions

Models X6, X8, X425,
X825, X36, X336, X2635

Crossover Networks



Model X36

Electro-Voice crossover networks are high-Q low insertion loss, frequency discriminatory filters designed for use in systems having a characteristic impedance of 16 ohms. All E-V crossovers are of the constant-K configuration. A basic advantage of the constant-K-type filter is that identical values of components may be used in both series and shunt arms; thus, identical phase rotation and transient response are insured on either side of the crossover frequency.

E-V crossovers are designated by the 3 db down point in the network frequency response curve. For example, the high-pass section of the X8 crossover is 3 db down at 800 cps, as is also the low-pass section. Attenuation in Electro-Voice networks takes place at the rate of 12 db per octave for $\frac{1}{2}$ -section filters and 6 db per octave for $\frac{1}{4}$ -section networks.

Because high-Q air-core inductors are used in these crossover networks, filter characteristics are maintained constant despite changes in average values of program level. Electro-Voice crossovers will safely handle up to 100 RMS watts. Since the average level of program material in home listening rarely exceeds 2 watts, the safety margin inherent in the design of these units is indeed a large one.

All Electro-Voice crossover networks are housed in drawn steel cans. Finish is gray and the component parts are potted in a thermoplastic asphalt.

SPECIFICATIONS

| Model | X425 | X6 | X8 | X825 | X36 | X336 | X2635 |
|-------------------------------------|--|---|--|--|--|--|--|
| Crossover Frequency | 400 cps | 600 cps | 800 cps | 800 cps | 3500 cps | 300 cps 3500 cps | 200 cps 600 cps 3500 cps |
| Impedance | 16 ohms | 16 ohms | 16 ohms | 16 ohms | 16 ohms | 16 ohms | 16 ohms |
| Insertion Loss—Lo Hi | .8 db .3 db | .6 db 0 db | .5 db 0 db | .8 db .3 db | .75 db 0 db | 1.5 db/.6 db 0 db | 1.5 db/.6 db 0 db |
| Section | $\frac{1}{4}$ section | $\frac{1}{2}$ section | $\frac{1}{2}$ section | $\frac{1}{4}$ section | $\frac{1}{2}$ section | $\frac{1}{2}$ section $\frac{1}{4}$ section (300 cps) | $\frac{1}{2}$ section $\frac{1}{4}$ section (200 cps) |
| Attenuation | 6 db/oct. | 12 db/oct. | 12 db/oct. | 6 db/oct. | 12 db/oct. | 12 db/oct. 6 db/oct.(300 cps) | 12 db/oct. 6 db/oct.(200 cps) |
| Phase Rotation | 135° | 270° | 270° | 135° | 270° | 270° 135° (300 cps) | 270° 135° (200 cps) |
| Dimensions—Height Depth Width | 4 $\frac{1}{16}$ 3 $\frac{3}{16}$ 4 $\frac{7}{16}$ | 5 $\frac{7}{16}$ 4 $\frac{9}{16}$ 5 $\frac{1}{4}$ | 4 $\frac{1}{16}$ 3 $\frac{3}{16}$ 4 $\frac{7}{16}$ | 3 $\frac{7}{16}$ 3 $\frac{3}{16}$ 4 $\frac{7}{16}$ | 3 $\frac{7}{16}$ 3 $\frac{3}{16}$ 4 $\frac{7}{16}$ | 5 $\frac{7}{16}$ 4 $\frac{9}{16}$ 5 $\frac{1}{4}$ | 6 $\frac{1}{16}$ 5 $\frac{1}{4}$ 5 $\frac{7}{8}$ |
| Shipping Weight | 4 lb | 5 lb | 4 lb | 3 lb | 2 lb | 9 lb | 11 lb |

MODEL X425 — The X425 crossover network is designed for use with most E-V woofers or coaxial drivers in an infinite baffle when it is desired to cross over to the mid-range from the bass driver at a lower frequency.

MODEL X6 — The X6 crossover network is designed for use with the Electro-Voice T25A or T10A driver units and 6HD Hoodwin diffraction horn.

MODEL X8 — The X8 crossover network is designed for use with the Electro-Voice T25A or T10A driver units and 8HD Hoodwin diffraction horn. The X8 is used in both the Aristocrat II and III systems, the Regency II and III systems, and the Empire II and III systems.



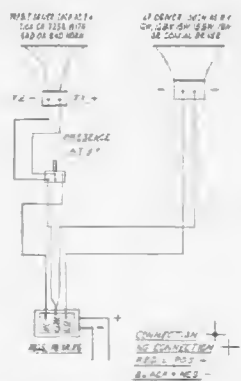


Fig. 1 — Typical Single Network Wiring Diagram

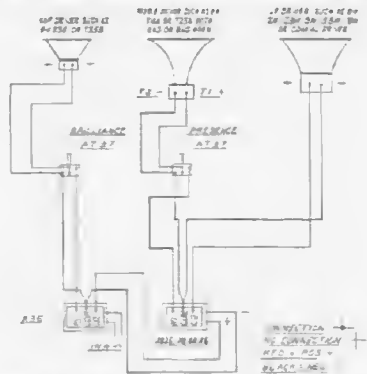


Fig. 2 — Typical Cascaded Network Wiring Diagram

MODEL X825 — The X825 crossover network is designed for use with the Electro-Voice T10A driver unit and 8HD Hoodwin diffraction horn. The X825 is of 1/4 section and finds application in medium efficiency systems employing E-V 12BW, SP12B and T10A drivers such as the Aristocrat I and IA, Regency I and IA and Empire I and IA.

MODEL X36 — The X36 crossover network is designed for use with the Electro-Voice T35 and T35B Super-Sonax VHF driver units.

MODEL X336 — The X336 crossover network is designed for use in the Electro-Voice Georgian 4-way loudspeaker system, Model 105. Frequencies below 300 cps are fed to the 15WK low-frequency driver, the frequencies between 300 and 3500 cycles to the 848HF compound coaxial mid-range driver, and those above 3500 cps to the T35 Super-Sonax VHF driver.

MODEL X2635 — The X2635 crossover network is designed for use in the Electro-Voice Patrician and the Residence Entertainment Center. The X2635 uses a 1/4-section constant-K 200 cps network with 1/2-section networks for the higher frequencies. Because of the inherent high-frequency cutoff of the low-frequency horns used in both the Patrician and Residence Entertainment Center, rapid attenuation is not required in the low-frequency crossover.

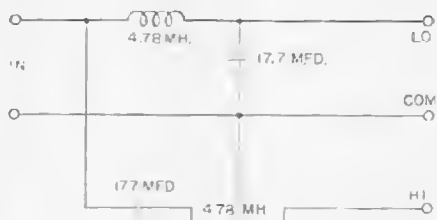
Typical applications of Electro-Voice networks are shown in Figures 1 and 2. Figure 1 illustrates a single crossover used to separate frequencies radiated by a T35 or T35B Super-Sonax VHF driver, and a low-frequency or coaxial low-range speaker.

Figure 2 is typical of a cascaded application in which two crossover networks are employed. It is not important in which order the crossovers are cascaded, the purpose of such an arrangement being merely to insure a pass band frequency response for the treble mid-range driver.

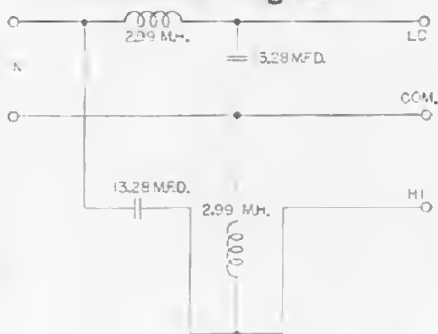
Although these crossovers have been designed for use in 16-ohm systems, they may be employed in other situations. For instance, if a 16-ohm unit is used in a system in which both the input and output impedances are 8 ohms, no appreciable shift in crossover frequency will be experienced, although the insertion loss of the crossover will be greater. In the case of reproducers with unequal impedances, the crossover should be connected to a 16-ohm source. As an example, if an 8-ohm woofer is used with a 16-ohm tweeter, the reproduction of bass will be favored; however, if the tweeter was an 8-ohm unit and the woofer 16 ohms, then treble reproduction would be relatively louder.

Complete instructions and information on the assembly of E-V drivers and systems are included with the individual driver units and packed with each E-V enclosure.

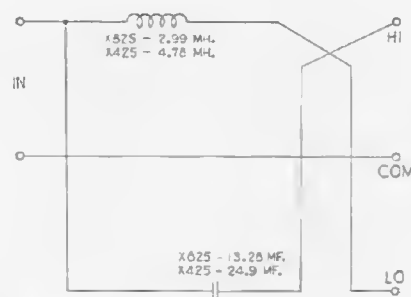
Schematic Diagrams



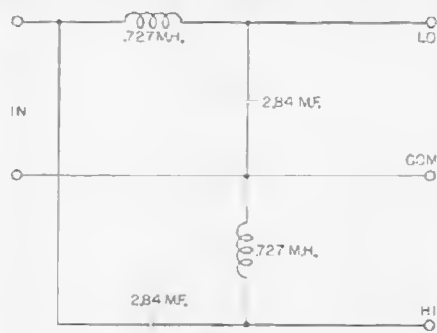
Model X6



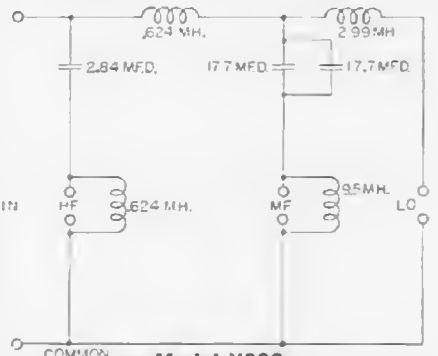
Model X8



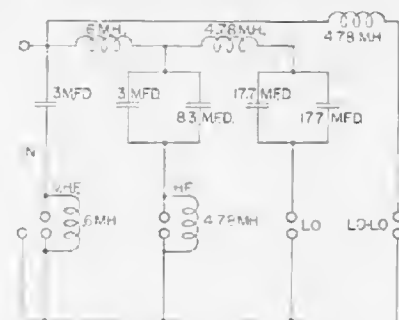
Model X825 and Model X425



Model X36



Model X336



Model X2635

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